

IN THE CLAIMS:

Claim 1 (currently amended) A flow-through electrochemical reactor for the treatment of wastewater from a debarking process the wastewater being forced through the reactor to lower organic compounds present in the wastewater to an environmentally acceptable level comprising:

a body having an internal chamber, and an inlet port and an outlet port in communication with said internal chamber, said inlet port and outlet port in sealing engagement with the internal chamber and adapted for sealed connection to an open recirculating system;

a series of sponge type metallic electrodes arranged in said internal chamber such that the wastewater flowing between said inlet port and said outlet port flows through openings of said sponge type metallic electrodes, at least one of said sponge ~~foam~~ type metallic electrodes having activity for the destruction of a target substance such as phenol and cresols;

said series of sponge type metallic electrodes having sufficient mechanical strength to withstand a flow of 60 litres/min ~~or more~~, the series of electrodes comprising and alternating arrangement of cathodes and anodes there being at least three cathodes and two anodes the cathodes being negatively charged and the anodes being positively charged.

Claim 2 (cancelled)

Claim 3 (previously amended) A flow-through electrochemical reactor according to claim 1, wherein the anodes comprises a substrate having a coating of antimony-doped tin oxide.

Claim 4 (previously amended) A flow-through electrochemical reactor according to claim 3, wherein the substrate is titanium.

Claims 5-7 (cancelled)

Claim 8 (previously amended) A flow-through electrochemical reactor according to claim 1, wherein the cathodes are made from ferrous alloy.

Claim 9 (previously amended) A flow-through electrochemical reactor according to claim 1, wherein the body can hold the anodes and cathodes in the chamber such that they do not touch and cause short-circuits.

Claims 10 – 12 (cancelled)

Claim 13 (previously amended) A flow-through electrochemical reactor according to claim 1, wherein the target substance is phenol, o-cresol, m-cresol or p-cresol.

Claims 14-16 (cancelled)

Claim 17 (previously amended) A flow-through electrochemical reactor according to claim 4, wherein the anodes have a diameter of about 1.5 m and a thickness of about 0.5 cm.

Claims 18 –23 (cancelled)

Claim 24 (previously added) The flow through electrochemical reactor according to claim 1 wherein said sponge type metallic electrodes have openings sufficient to provide enough hydrodynamic turbulence to promote oxidation activity and allow liquid flow with minimal resistance.

Claim 25 (previously added) The flow through electrochemical reactor according to claim 1 wherein said sponge type metallic electrodes can withstand a high back flow water circulation for chamber clean up.

Claim 26 (previously added) The flow through electrochemical reactor according to claim 1 having a current density of between 0.7 mA/cm² and 70 mA/cm² between respective cathodes and anodes.

Claim 27 (previously added) The flow through electrochemical reactor according to claim 26 wherein for different target compounds zones of different current densities are formed.

Claim 28 (previously added) The flow through electrochemical reactor according to claim 27 wherein the distance between the electrodes is changed to alter current densities.